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useful in determining what our lowest limit has really been, and as an indication that the photographic scale can be brought into good accord with the photometric, since the Cordoba and Cape scales agree, for certain plates, throughout the entire range.

The disadvantage under which I labour, in the fact that it is almost impossible to find permanent and reliable assistance here, is very great. I have had many untrustworthy men in my employ; and, in general, the foreigners who come here are true adventurers, who are not to be restrained when a prospect of better remuneration or less work offers; and their substitutes are usually drawn from the same uncertain element. This was not the case during the first period of our existence, when the remuneration was essentially upon a gold basis.

Catalogue of Right Ascensions of 76 Stars. By Robert Snow.

[The following catalogues were presented to the Society many years ago, but were not at the time considered worthy of publication. Dr. Ristenpart, who has undertaken the great work of combining all existing catalogues, on seeing the notes in *Monthly Notices*, iii. p. 99, and iv. p. 143, wrote to ask if these catalogues were still in existence. Search was made in the archives of the Society, and Mr. Snow's catalogues were found and sent (by permission of the Council) to Dr. Ristenpart. In returning them he expressed an opinion in favour of their publication; and the Council on receipt of this valuable opinion directed that the catalogues should be printed in the next following number of the *Monthly Notices*. In preparing them for publication the Editors have omitted from the first Catalogue a column of "extreme differences," and from the second a column of "greatest difference from the mean." Nos. 7 and 34 in the second Catalogue have been bracketed, as they were made with a 20-inch transit. One or two corrections have been pointed out by Dr. Ristenpart: thus the A.S.C. Nos. of 55 and 69 in the second Catalogue are given in the MS. as 1316 and 1609, and the B.A.C. number for No. 17 has been supplied. At the end of each catalogue will be found a list of corrections to the comparisons with other catalogues. It seemed desirable to give these instead of altering the text, as they are the only indication we now have of the general accuracy of the work.]

EDITORS of the *Monthly Notices*.

This catalogue was constructed with a view towards determining how nearly the results of a small instrument, used under disadvantageous circumstances, would approach to those obtained at a first-rate observatory. The instrument employed was a 20-inch transit, mounted upon the usual cast-iron stand, fixed

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upon a pier of brickwork, in connexion with a chronometer showing sidereal time and beating half-seconds. The transits were, if possible, always observed over the seven wires, and when by accident, or by the intervention of clouds, the passages over any of them were lost, the remaining wires were reduced individually to the mean of all the seven by the help of a table of the equatorial distances of each wire from the mean of the whole. This table was obtained from ten complete transits of *Polaris* and twenty of δ *Ursæ Minoris*, a correction having been applied for the circular path of *Polaris*.

Numerical corrections for instrumental error have been used (viz. for the errors of inclination, collimation, and deviation in az.) in preference to attempting to destroy them by mechanical means; and in applying these corrections much trouble has been avoided by the use of Mr. Epps's tables. No correction has been applied for the inequality of the pivots.

With respect to the instrument's optical power, stars of the fourth and fifth magnitude have been considered as more agreeable to observe than brighter stars, and no difficulty has been found, on fine nights, in observing stars of the seventh magnitude. An eighth magnitude will but just allow of sufficient illumination to render the wires perceptible, and cannot be observed with any certainty; a star following β *Canis Minoris* about 42^s was found to be a good specimen of the *minimum visibile* with such an instrument in a perfectly dark field.

In observing the transits a second was taken from the chronometer when a star was approaching the first wire; and the habit of never looking again at the chronometer until the star had passed over all the wires was soon acquired. The *half-beat* of the chronometer was merely mentally acknowledged without further account being taken of it; and in this way observing with a half-seconds chronometer became a similar operation to observing with a regular transit clock. Indeed, a clock and the chronometer in question have been used on the same evening without any sense of confusion arising from the change. The stars whose places are given in the *N.A.* were used for determining the clock errors, with the exception of *Polaris* and δ *Ursæ Minoris*, whose places were taken from the Berlin Ephemeris until the appearance of the *N.A.* for 1834.

Some few additional stars have been taken for this purpose from the Greenwich Catalogue of 1112 stars [1830] during the course of last year; but it has been done but seldom. As far as possible each unknown star has been made to depend on one or more of the standard stars situated nearly in the same parallel of declination. The power used, both with and without the diagonal eyepiece, was 54; the diagonal eyepiece was laid aside whenever it was possible to do so. Of course an instrument so humble as the one in question must always be liable to great instability, which no care in using it will prevent; besides which the employment of the diagonal eyepiece is very unsatis-

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factory owing to the awkward position into which the use of it forces the head in observing stars in and near the zenith, not to mention the loss of light and the additional handling of the instrument which it occasions.

The places of 67 out of the 76 stars which this catalogue consists of are to be found in the Greenwich Catalogue of 1112 stars. Five out of the 67 are in absolute agreement with the Greenwich places, and there are 41 stars whose differences from Greenwich lie between $0^s.00$ and $0^s.10$; 17 whose differences lie between $0^s.10$ and $0^s.20$, and 4 whose differences are above $0^s.20$, the widest difference being $0^s.26$. Amongst these 62 differences the + and the — signs are exactly equally divided, and the sum of the 31 + differences is $2^s.95$, and of the 31 — differences is $3^s.03$; and the difference of these two quantities is $-0^s.08$, which divided by 67 (which is the number of the stars under comparison) gives $-0^s.0012$ for the final *mean* difference of the present catalogue from that of Greenwich.

ROBERT SNOW.

September 30, 1834.

(13 *St. James's Place.*)

Ref. No.		Name of Star.	Mean R.A. 1835. h	m	s	No. of Obs. E	W	Precession. s	Diff. from Gr. 1112 Stars. s	Diff. from A.S.C. s
1	B	Piscium	0	6	28·74	5	0	+3·073	...	−0·06
2	*d*	Piscium	0	12	6·76	6	4	+3·077	+0·10	+0·31
3	58	Piscium	0	38	25 57	3	4	+3·111	...	−0·95
4	ϵ	Piscium	0	54	23·35	5	5	+3·106	−0·06	−0·53
5	ζ'	Piscium (pr^g star)	1	5	7·03	6	4	+3·112	+0·12	+0·06
6	μ	Piscium	1	21	32·79	5	5	+3·111	0·00	−0·37
7	ν	Piscium	1	32	51·06	3	7	+3·111	+0·10	−0·23
8	ξ'	Ceti	2	4	15·76	3	4	+3·165	−0·07	+0·57
9	ν	Ceti	2	27	13·34	5	5	+3·136	−0·06	−0·40
10	μ	Ceti	2	36	1·79	5	5	+3·207	+0·10	−0·51
11	λ	Ceti	2	50	52·78	6	4	+3·199	...	−0·62
12	q	Orionis	4	40	53·33	5	7	+3·251	+0·04	+0·21
13	ϵ	Aurigæ	4	50	8·66	7	3	+4·280	−0·09	−0·50
14	η	Aurigæ	4	54	57·28	5	5	+4·182	+0·06	−0·26
15	μ	Orionis	5	53	18·42	5	5	+3 295	+0·04	−0 69
16	ν	Orionis	5	58	8·93	5	5	+3·421	+0·17	−0·22
17	κ	Aurigæ	6	4	51·67	5	5	+3·825	+0·20	−0·54
18	811	−A.S.C. (foll^g star)	6	22	40·71	6	4	+3·497	...	+0·12
19	β	Canis Minoris	7	18	12·17	12	10	+3·259	−0 18	−0·66
20	ζ	Cancri	8	2	44·61	5	5	+3·445	...	−0·33
21	β	Cancri	8	7	33·79	6	5	+3·262	−0·01	−0·44
22	δ	Hydræ	8	28	55·16	4	6	+3·185	−0·13	−0 61

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Ref. No.		Name of Star.	Mean R.A. 1835. h m s	No. of Obs. E	W	Precession. s	Diff. from Gr. 1112 Stars. s	Diff. from A S.C. s
23	γ	Cancri	8 33 43·62	1	4	+3·493	+0·02	−0·32
24	δ	Cancri	8 35 18·06	4	6	+3·422	−0·09	−0·44
25	ϵ	Hydræ	8 38 2·26	4	6	+3·195	−0·13	−0·43
26	ρ	Hydræ	8 39 41·37	3	7	+3·184	−0·04	−0·32
27	ζ	Hydræ	8 46 40·32	6	6	+3·183	−0·25	+0·19
28	κ	Cancri	8 58 48·34	3	7	+3·259	−0·18	+0·25
29	π	Leonis	9 51 29·43	5	5	+3·179	0·00	−0·22
30	ρ	Leonis	10 24 7·07	9	4	+3·166	+0·04	−0·02
31	l	Leonis Minoris	10 29 24·99	6	5	+3·401	+0·07	−0·21
32	n	Leonis Minoris	10 36 40·38	5	5	+3·361	+0·10	−0·66
33	o	Leonis Minoris	10 44 3 77	6	4	+3·375	−0·07	−0·20
34	σ	Leonis	11 12 37·66	6	5	+3·102	0·00	−0·48
35	ι	Leonis	11 15 19·26	6	4	+3 121	−0·14	−0 52
36	ν	Virginis	11 37 22·82	4	6	+3·086	−0·13	−0·34
37	o	Virginis	11 56 48·39	4	7	+3·071	−0·17	−0·33
38	a	Comæ Berenices	12 18 43·74	2	3	+3·011	+0·09	−0·58
39	d	Canum Venat.	12 25 53·49	2	4	+2·864	0 00	−0·05
40	ρ	Virginis	12 33 32·02	5	5	+3·030	−0·24	−0 63
41	ϵ	Virginis	12 53 57·96	6	4	+3·003	+0·06	−0·19
42	τ	Boötis	13 39 25·49	4	6	+2·883	−0·03	−0·55
43	η	Boötis	13 46 49·69	5	5	+2·859	+0·15	−0·21
44	ρ	Boötis	14 24 43·08	6	4	+2·592	−0·03	−0·02
45	ξ	Boötis	14 43 46·74	5	5	+2·753	+0 07	−0·27
46	β	Boötis	14 55 43·95	2	8	+2·261	−0·05	−0·43
47	μ	Boötis	15 18 15·44	4	6	+2·275	+0·11	−0·41
48	β	Coronæ Boreal.	15 21 1·71	5	5	+2·483	−0·08	−0·05
49	β	Serpentis	15 38 34·44	6	4	+2·757	+0·05	−0·28
50	ϵ	Serpentis	15 42 35·75	6	5	+2·972	−0·06	−0·19
51	γ	Serpentis	15 48 50·09	5	5	+2·741	+0·03	−0·08
52	h	Herculis	16 5 5·81	4	6	+2·956	...	−0 04
53	β	Herculis	16 23 7·71	5	5	+2·579	+0·03	−0·55
54	ι	Ophiuchi	16 46 12·26	5	5	+2·834	−0·08	−0·19
55	κ	Ophiuchi	16 49 51·78	5	5	+2·852	+0·10	−0·18
56	ϵ	Herculis	16 53 58·61	3	2	+2 293	+0·15	−0·34
57	δ	Herculis	17 8 15·41	2	3	+2·460	−0 01	−0·97
58	β	Ophiuchi	17 35 19·52	4	6	+2·960	−0·08	−0·30
59	S^2	Ophiuchi	17 59 31·80	8	2	+2·843	+0·03	−0·43
60	ϵ	Aquilæ	18 52 8·19	6	4	+2·723	−0·03	−0·82

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Ref. No.		Name of Star.	Mean R.A. 1835. h	m	s	No. of Obs. E	W	Precession. s	Diff. from Gr. 1112 Stars. s	Diff. from A.S.C. s
61	A	Aquilæ	19	11	57·44	6	4	+2·796	...	+0·18
62	*b*	Aquilæ	19	17	6·14	6	4	+2·871	+0·09	−0·34
63	μ	Aquilæ	19	26	1·57	7	3	+2·915	+0·10	−0·31
64	σ	Aquilæ	19	31	3·07	6	4	+2·960	+0·01	+0·34
65	τ	Aquilæ	19	56	4·73	5	5	+2·929	...	−0·19
66	ϵ	Delphini	20	25	19·79	2	3	+2·864	0·00	−0·34
67	β	Delphini	20	29	48·59	2	3	+2·803	+0·20	−0·30
68	γ	Equulei	21	2	19·00	5	5	+2·912	+0 05	−0·17
69	α	Equulei	21	7	34·34	5	4	+2·995	+0·26	−0·05
70	T′	Pegasi	21	30	16·12	4	2	+2·997	−0·15	−0·38
71	θ	Pegasi	22	1	52·70	4	5	+3·006	−0·21	−0·05
72	ξ	Pegasi	22	38	27·24	4	6	+2·975	−0·17	−0·35
73	*l*	Pegasi	22	58	41·82	2	5	+3·015	...	−0·19
74	*q*	Pegasi	23	20	48·90	3	5	+3·020	...	−0·44
75	O	Pegasi	23	34	58·81	3	5	+3·044	...	−0·40
76	ω	Piscium	23	50	50·56	6	4	+3·062	−0 04	−0·02

Note.—The following corrections should be made in the columns giving comparisons with Pond's Catalogue and the Catalogue of the Astronomical Society.—Eds. *M.N.*

			s					s
No. 1.	Difference from	A.S.C.	+0·07	No. 30.	Difference from	A.S.C.		−0·10
4.	,,	,,	−0·03	61.	,,	,,	,,	+0·15
7.	,,	,,	−0·13	67.	,,	,,	Gr. 1112	−0·20
8	,,	,,	−0·43	69.	,,	,,	A.S.C.	−0·08
28.	,,	,,	+0·65	71.	,,	,,	Gr. 1112	−0·21

Catalogue of Right Ascensions of 125 *Stars.* By Robert Snow.

The accompanying right ascensions were observed with a transit instrument of $3\frac{1}{2}$ feet focal length and aperture $2\frac{3}{4}$ inches, made by Mr. Simms.

It has seven vertical spider's lines in its principal focus, the mean equatorial interval of which is $11^{s}\cdot81$, and has an additional vertical wire movable in a direction parallel to the rest by means of a micrometer screw, one revolution of which corresponds to three seconds of time at the equator. The instrument is mounted on stone pillars let into a thick flag-stone fixed on a brick pier worked up in cement resting on a foundation of hard flinty gravel. It is very easily reversed on its Y's,

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